

AMENDMENTS TO THE DRAWINGS:

Please amend the drawing figures with the attached replacement drawing sheets. The drawing figures have been amended to remove extraneous characters.

REMARKS

The Examiner is thanked for the due consideration given the application. The specification has been amended to improve the language. Substitute drawing figures have been provided.

Claims 1-21 are pending in the application. Claims 1-6 and 18 have been withdrawn from consideration. Withdrawn claims 1 and 3 have been amended to better correspond to the EP application, in which unity of invention was found. The substantive amendments to claim 7 are to better correspond to the EP application and also find support at page 13, lines 1-15 of the specification. Other amendments to the claim set improve the language in a non-narrowing fashion.

No new matter is believed to be added to the application by this amendment.

Election Restriction

Claims 1-6 and 18 have been withdrawn from consideration.

The Official Action asserts that election has been without traverse. However, election was clearly made with traverse at line 21 of page 10 of the response filed October 20, 2008. The grounds for traversal were set forth in detail at pages 11-13 of this paper.

The Official Action asserts that this response failed to point out the errors in the restriction requirement. However, at the least, one clear error lies in that unity of invention was

found in the corresponding EP application. In support of this, the withdrawn claims have been amended to better correspond to those in the EP application.

Accordingly, rejoinder and examination of all the claims on the merits is respectfully requested.

The Drawings

The drawing figures are objected to as containing reference characters not described in the specification. Substitute drawing figures have been submitted in which the extraneous characters have been removed without prejudice or disclaimer.

The Specification

The Specification has been objected to as containing informalities. The comments in the Official Action have been considered, and the specification has been correspondingly amended to be free from informalities.

Claim Objections

The Claims have been objected to as containing informalities. The comments in the Official Action have been considered, and the claims have been correspondingly amended to be free from informalities.

Rejection Under 35 USC §112, Second Paragraph

Claims 7-17 and 19-21 have been rejected under 35 USC §112, second paragraph as being indefinite. This rejection is respectfully traversed.

The Official Action raises issues regarding "means" claims. However, the claims have been amended so as not to invoke 35 USC §112, sixth paragraph.

The Official Action raises issues as to clarity and antecedent basis. However, the claims have been amended to be clear, definite and have full antecedent basis.

This rejection is believed to be overcome, and withdrawal thereof is respectfully requested.

Art Rejections

Claims 7-12, 16, 17, 19 and 20 have been rejected under 35 USC §103(a) as being unpatentable over VORENKAMP et al. (WO 02/14050) in view of FEINSTEIN (U.S. Patent 2,796,033), DRESEN et al. (U.S. Patent 5,975,879) and REIL et al. (U.S. Patent 5,158,786). Claims 13 and 15 have been rejected under 35 USC §103(a) as being unpatentable over VORENKAMP et al. in view of FEINSTEIN, DRESEN et al. and REIL et al., and further in view of GORDON et al. (U.S. Patent 5,256,365). Claims 14 and 21 have been rejected under 35 USC §103(a) as being unpatentable over VORENKAMP et al. in view of FEINSTEIN, DRESEN et al. and REIL et al., and further in view of ALESI (U.S. Patent 3,779,697).

These rejections are respectfully traversed.

The present invention pertains to twin-sheet thermoforming of fuel tanks. The present invention is illustrated, by way of example, in Figure 1 of the application, which is reproduced below.

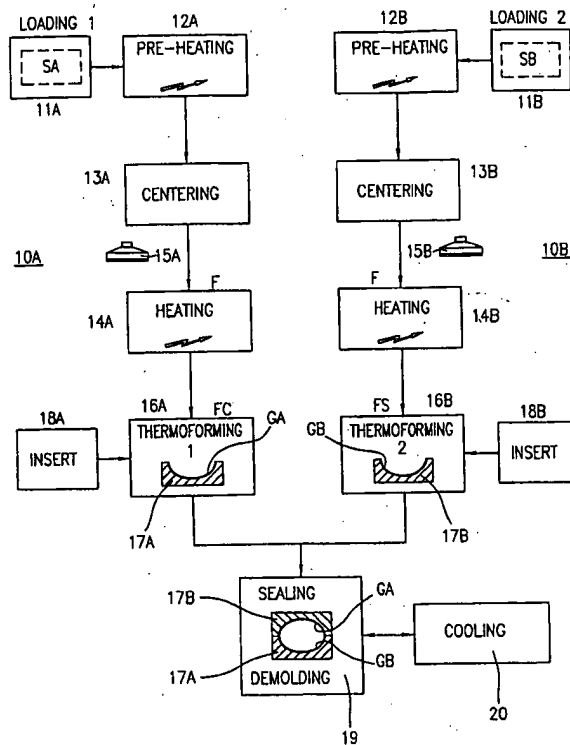
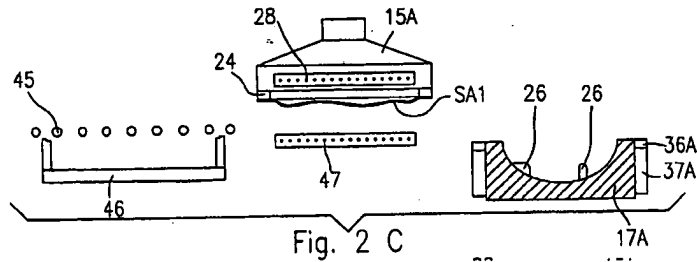


Fig. 1

In the present invention first and second sheets (SA, SB) of thermoformable plastic material, are separately fed along respective processing lines (10A, 10B). The sheets (SA, SB) are heated and gripped along their peripheral edges by a pneumatically actuate suction and vacuum sheet holding device (15A, 15B), for supporting the heated sheets (SA, SB) in a substantially flat condition while they are moved towards a respective thermoforming station (16A, 16B). Both the molds (17A, 17B) are disposed side by side with their open cavity facing upwards. After thermoforming of the plastic sheets (SA, SB), one of the molds (17B) is turned upside down onto the other mold

(17A), to overlap and weld superimposed sealing areas of the two thermoformed shells (GA, GB).

Another exemplary view of the present invention is shown in Figure 2C, which is reproduced below.



This aspect of the present invention is reflected in the gripper (24A, 24B) and the vacuum sheet holding device (15A, 15B) set forth in independent claim 7.

In the present invention, a relevant difference exists between the "pneumatic gripping" and the "vacuum holding" of the plastic sheet.

"Pneumatic gripping" or more properly "retaining", means that **air is continuously sucked** to retain the sheet, avoiding the same to fall down. Nevertheless a large plastic sheet retained at the peripheral edges may sag.

Therefore "vacuum holding" means that no air suction is performed upon reaching the required vacuum degree. Furthermore the vacuum is controlled to maintain large plastic sheets suitable for molding fuel tanks or technical articles, in a flat or planar condition during heating, to prevent sagging and

stretching of the same plastic sheet, during the movement along the working line.

VORENKAMP et al. pertain to producing plastic containers from thermoplastic sheets. Figure 1 of VORENKAMP et al. is reproduced below.

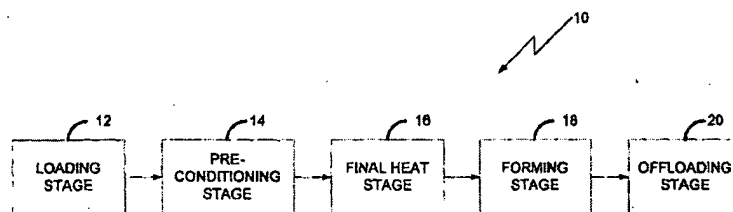


FIG. 1

The mold shells of VORENKAMP et al. are shown in Figure 3 of the reference, a portion of which is reproduced below.

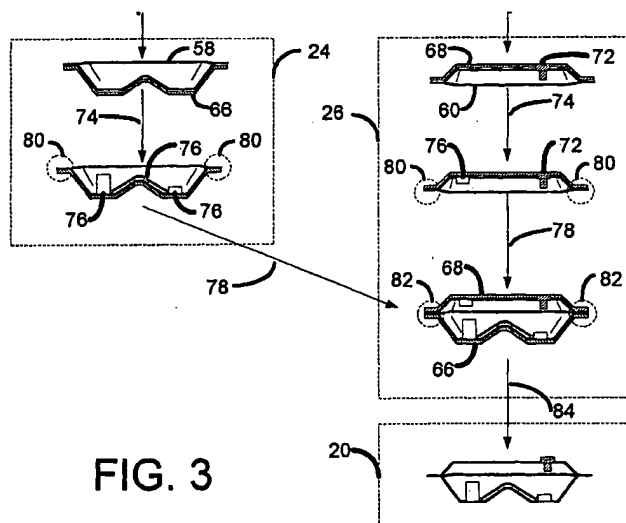


FIG. 3

The Official Action admits that VORENKAMP et al. fail to teach first and second shaping molds arranged side by side, with open cavities of the molds facing upwards, and a drive for superimposing and sealing the molds. The Official Action turns to the secondary references.

First, it is noted that the secondary references do not pertain to molding plastic sheets, and are thus non-analogous art.

FEINSTEIN, for example, relates to the manufacture of a chocolate figure within a plastic packaging, provided by two plastic sheets that are conjointly shaped while they are moving on a same processing line (see column 2 and figures). The thermoforming plastic shells in FEINSTEIN do not involve any technical problem either in respect to the sheet material, and the use of the same shells, except the packaging use.

Another feature distinguishing the present invention from FEINSTEIN (and the other secondary references) is "a pneumatic gripping frame on said vacuum sheet holding device (15A, 15B), a corresponding gripping frame (36A, 36B) movingly supported by control cylinders 37A, 37B," such as is set forth in claim 7.

DRESEN et al. merely suggest the use of stationary pneumatic clamping means 30 in each working station; the clamping means are conformed to operate independently by the rotational

movement of the carousel 46, and are not provided in combination with a movable a vacuum bell, for the scope of present invention.

GORDON et al. relates to vacuum clamping, for picking up single labels from a magazine, to transfer each picked up label to a suction cup of a transfer unit, in a mold labeling device.

GORDON et al. does not suggest or make obvious the use of the vacuum in combination with a movable vacuum bell provided with a pneumatically actuated clamping frame, for the purpose of maintaining a planar condition of the plastic sheet according to present invention.

The same apply to REIL et al.

One of ordinary skill and creativity would thus fail to produce a claimed embodiment of the present invention from a knowledge of the applied art references. A *prima facie* case of unpatentability has thus not been made.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

Conclusion

The objections and rejections are believed to have been overcome, obviated or rendered moot and no issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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APPENDIX:

The Appendix includes the following item(s):

- ☒ - Replacement Sheets for Figures 1, 2A and 2C of the drawings